



03 FEB 2005



(43) International Publication Date  
19 February 2004 (19.02.2004)

PCT

(10) International Publication Number  
**WO 2004/015321 A1**

(51) International Patent Classification<sup>7</sup>: F16L 13/02,  
13/14

Marcel, Ghislain [FR/FR]; 29, rue Clauzel, F-75009 Paris  
(FR). HOSS, Jean, Louis [FR/FR]; 3, avenue Rozee,  
F-95110 Sannois (FR).

(21) International Application Number:  
PCT/EP2003/009305

(74) Agent: FITZPATRICKS; 4 West Regent Street, Glasgow  
G2 1RS (GB).

(22) International Filing Date: 1 August 2003 (01.08.2003)

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,  
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,  
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0217937.2 2 August 2002 (02.08.2002) GB

(71) Applicant (*for all designated States except US*): STOLT  
OFFSHORE S.A. [FR/FR]; 32, avenue Pablo Picasso,  
TSA 76001, F-92754 Nanterre Cedex (FR).

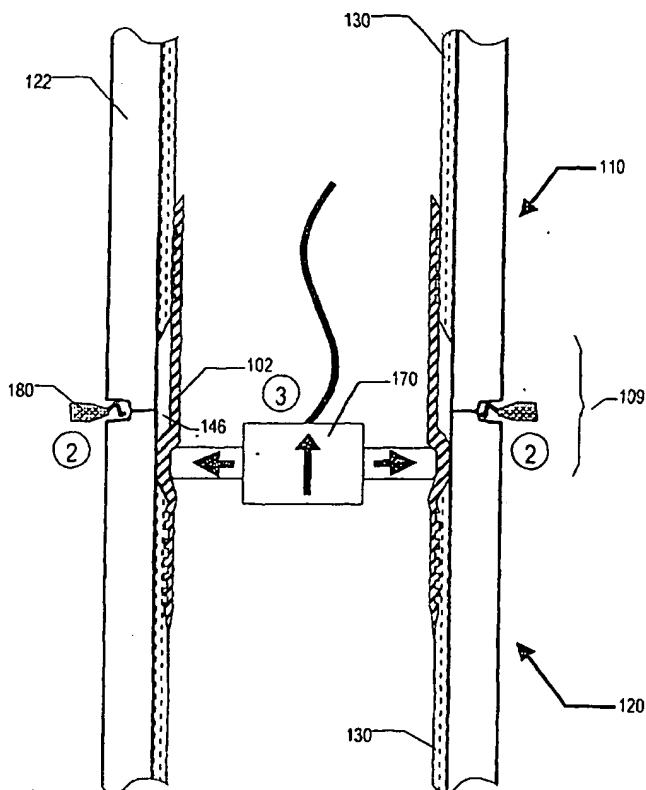
(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): ALLIOT, Vincent,

[Continued on next page]

(54) Title: METHOD OF AND APPARATUS FOR INTERCONNECTING LINED PIPES



(57) Abstract: There are disclosed methods of and apparatus for interconnecting lined metal pipes (110, 120), applying in particular to the offshore oil and gas industry. Corrosion is a common problem in the industry. Lining pipes overcomes the problem, but welding sections of pipe together can be a complicated and time-consuming task, requiring dedicated and sophisticated tooling. More desirable is the ability to use conventional pipe-laying equipment (20, 40, 50, 60, 70, 80, 90) with little additional tooling. As such, there are disclosed methods and apparatus compatible with known offshore connection methods, particularly where the spacing of joints on the pipe is less than 100m. The chosen technique will not significantly impact the laying rate of the lined pipe, compared with unlined pipe. The method includes connecting lined pipes (110, 120) using a corrosion-resistant bridging member (102) internally overlapping both linings, leaving a void space (146) behind the weld region (109) while at least the initial stages of welding (180) are performed, and expanding (170) the bridging member to provide a seal against the liners, in a controlled sequence. There is also disclosed a bridging member (102), tooling (170) and pipelay apparatus suitable for use with this method.

WO 2004/015321 A1